

Service Manual

ORDER NO.
RRV 1590

STEREO AMPLIFIER

A-705R

● Refer to the service manual ARP2890 for A-604R/HE.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	A-705R		
SD	O	AC110V/120 – 127V/220V/240V	With the voltage selector
HY/EW	O	AC220 – 230V	AC240V, *
HY/GR	O	AC220 – 230V	AC240V, *

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

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INPUT ASSY

AWZ8359 and AWZ7806 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7806	AWZ8359	
	C717 – C720 C729 – C732 CN8105 PIN JACK (2P) JA8105 PIN JACK (2P) CN8106 PIN JACK (6P)	CEEA470M25 CEEA100M50 AKB7028 Not used AKB7012	CENA470M25 CENA100M50 Not used DKB1045 AKB7079	For CN8105

MPU ASSY

AWZ8360 and AWZ7758 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7758	AWZ8360	
	L901, L940 – L942	LAU220K	LAU220J	

VOLUME ASSY

AWZ8363 and AWZ7724 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7724	AWZ8363	
	C801, C802 R807, R808 R809, R810 R817, R818	CEAS220M50 RD1/4PM271J RD1/4PM272J RD1/4PM562J	CENA220M25 RDR1/4PM271J RDR1/4PM272J RDR1/4PM562J	

POWER AMP ASSY

AWZ8350 and AWZ7706 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7706	AWZ8350	
	C1 (10000µF/56V) C2 (10000µF/56V) C303, C304 Q401, Q402 Q403, Q404 RY401, RY402	ACH1234 ACH1235 CEAS471M6 2SC3298 2SA1306 ASR – 112	ACH7050 ACH7051 CEAS471M6R3 2SC4793 2SA1837 ASR – 109	

VOLTAGE AMP ASSY

AWZ8351 and AWZ4895 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ4895	AWZ8351	
	C203 – C206 (220µF/16V) C213, C214 (10µF/50V) C231, C232, C235, C236 (330µF/63V) D201 – D204 R203, R204 R205 – R208 R267 – R270 R271, R272 R275, R276 R293, R294 VR203, VR204 (47kΩ)	CEAS221M16 CEAS100M50 CEAS331M63 AEL1148 RD1/4PM104J RD1/4PM100J RD1/2PM472J RD1/4PM221J RD1/4PM101J RD1/4PM112J ACP1045	ACH7052 VCH1130 ACH7053 BR3371XJ30A RDR1/4PM104J RDR1/4PM100J RDR1/2PM472J RDR1/4PM221J RDR1/4PM101J RDR1/4PM112J RCP1047	

REC OUT ASSY

Although AWZ8352 and AWZ7842 are different in part number, they consist of the same components.

DIODE ASSY

AWZ8353 and AWZ7763 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7763	AWZ8353	
	D595 D596	FMM – 22S FMM – 22R	F10P20F F10P20FR	

POWER TRANS ASSY

Although AWZ8354 and AWZ7759 are different in part number, they consist of the same components.

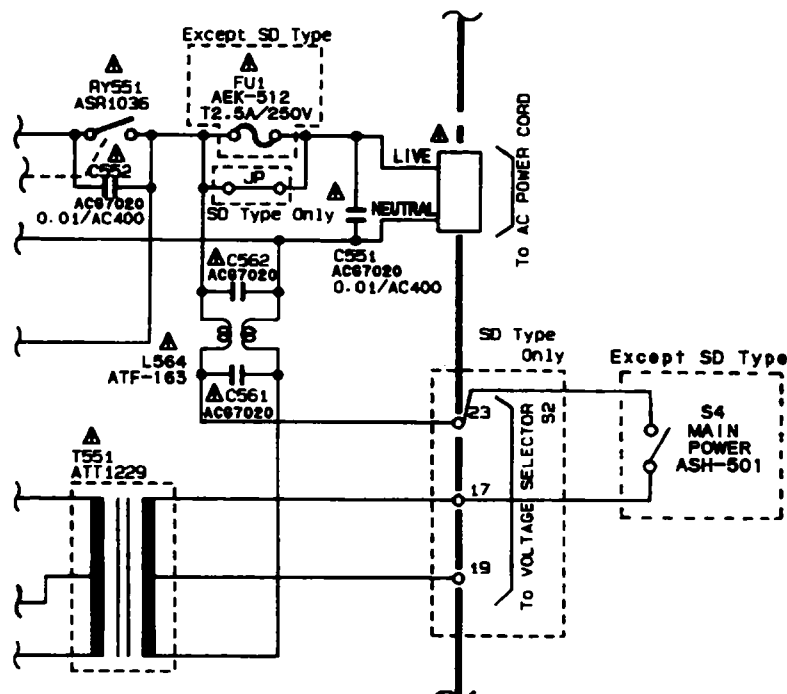
A-705R

POWER SW ASSY

AWZ8355, AWZ8365 and AWZ7707 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ7707	AWZ8355	AWZ8365	
	IC551 LS53	NJM78M56FAS LAU220K	NJM78M56FA LAU220J	NJM78M56FA LAU220J	

POWER SW assy
(AWZ8355:HY/EW AND HY/GR TYPES)
(AWZ8365:SD TYPE)



HEADPHONE ASSY

Although AWZ8357 and AWZ4885 are different in part number, they consist of the same components.

TONE ASSY

AWZ8358 and AWZ7766 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7766	AWZ8358	
	C613, C614 C615, C616 C619, C620 C649, C650 C651, C652	CKCYX103M25 CKCYX473M25 CKCYX273M25 CKCYX333M25 CKCYX223M25	CGCYX103M25 CGCYX473M25 CGCYX273M25 CGCYX333M25 CGCYX223M25	
	D610 - D615 S604 Remote receiver unit	AEL1099 ASG1029 AXX1023	BR3371XJ30A ASG1051 GPIU58X	

● CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

A-705R/HY/EW, HY/GR, SD and A-604R/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks	
		A-604R	A-705R				
		HE	HY/EW	HY/GR	SD		
NSP	AF ASSY	AWK7172	AWK7304	AWK7304	AWK7306		
	└ POWER AMP ASSY	AWZ7706	AWZ8350	AWZ8350	AWZ8350		
	└ VOLTAGE AMP ASSY	AWZ4895	AWZ8351	AWZ8351	AWZ8351		
	NSP └ REC OUT ASSY	AWZ7842	AWZ8352	AWZ8352	AWZ8352		
	NSP └ DIODE ASSY	AWZ7763	AWZ8353	AWZ8353	AWZ8353		
	└ POWER TRANS ASSY	AWZ7759	AWZ8354	AWZ8354	AWZ8354		
	└ POWER SW ASSY	AWZ7707	AWZ8355	AWZ8355	AWZ8365		
NSP	INPUT ASSY	AWK7180	AWK7305	AWK7305	AWK7305		
	└ HEADPHONE ASSY	AWZ4885	AWZ8357	AWZ8357	AWZ8357		
	└ TONE ASSY	AWZ7766	AWZ8358	AWZ8358	AWZ8358		
	└ INPUT ASSY	AWZ7806	AWZ8359	AWZ8359	AWZ8359		
NSP	CONTROL COMPLEX ASSY	AWP7003	AWP7008	AWP7008	AWP7008		
	└ MPU ASSY	AWZ7758	AWZ8360	AWZ8360	AWZ8360		
	└ VOLUME ASSY	AWZ7724	AWZ8363	AWZ8363	AWZ8363		
Δ	S1 Voltage selector (AC110V/120 – 127V/220V/240V)	Not used	Not used	Not used	AKX – 507 #1		
Δ	S2 Voltage selector (AC110 – 127V/220 – 240V)	Not used	Not used	Not used	AKX1004 #1		
Δ	T1 Power transformer (AC220 – 230V/240V)	ATS1490	ATS7124	ATS7124	Not used		
Δ	T1 Power transformer (AC110V/120 – 127V/220V/240V)	Not used	Not used	Not used	ATS7125		
Δ	AC outlet	AKP – 502	AKP – 502	AKP – 502	AKP – 515		
Δ	FU2 Fuse (2.5A)	Not used	Not used	Not used	AEK – 512 #2		
Δ	AC power cord	ADG1127	ADG1154	ADG1154	ADG1158		
	Scerw	Not used	VBZ30P120FMC	VBZ30P120FMC	VBZ30P120FMC		For insulator
	Rear panel (MET)	ANC7240	ANC7431	ANC7431	ANC2081		
	Insulator	Not used	AMR2622	AMR2622	AMR2622		
	S4 Switch	Not used	ASH – 501 #3	ASH – 501 #3	Not used		On rear panel
	Screw	Not used	BMZ30P080FZK	BMZ30P080FZK	Not used		For S4 switch
NSP	Front panel (MET)	ANB7018	ANB7055	ANB7055	ANB7055		
	Heat sink	ANH1435	ANH7017	ANH7017	ANH7017		
	Sheet	AEE1014	AEE7010	AEE7010	AEE7010		
	Operating instructions (English/French/German/Itarian/ Swedish/Dutch/Spanish/Portuguese)	ARE7049	ARE7071	Not used	Not used		
	Operating instructions (German)	Not used	Not used	ARC7119	Not used		
	Operating instructions (English/Spanish/Chinese)	Not used	Not used	Not used	ARE7072		
	Side pad L	AHA1600	AHA1658	AHA1658	AHA1658		
	Short pin plug	Not used	AKM – 050	AKM – 050	AKM – 050		Attach to PHONO JACK
	Packing case	AHD7185	AHD7313	AHD7313	AHD7314		
	Packing sheet	AHG1204	AHG7008	AHG7008	AHG7008		

Note *1 : Refer to "SCH-1" of A-604R/SD in the ARP2890 service manual.

*2 : Refer to "SCH-6" of A-604R/SD in the ARP2890 service manual.

*3 : Refer to page4.

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
CAPACITORS					C556		CEAS101M25
	C1	(10000/56)	ACH1234		C554		CEAS102M25
	C2	(10000/56)	ACH1235		C555 ,C558		CEAS470M25
	C417	-C420	CCCSL680K500		C564 ,C581		CKCYF103Z50
	C308	-C310	CEAS010M50	RESISTORS			
	C306		CEAS220M50		R556		RD1/4PM102J
	C501	,C502	CEAS331M50		R553		RD1/4PM222J
	C303	,C304	CEAS471M6		R557		RD1/4PM331J
	C301	,C302	CEAS4R7M50	△	R551		RFA1/4PS470J
	C505		CEHAQ100M50	△	R555		RFA1/4PS4R7J
	C503	,C504 ,C506	CEHAQ101M50	△	R552		RS2LMF101J
	C401	-C404	CFTXA104J50		Other Resistors		RD1/8PM□□□J
	C405	-C412	CFTXA223J50	OTHERS			
	C305		CKCYF103Z50		JACK		AKN-207
RESISTORS				△	AC INLET(1P)		AKP1132
△	R409	,R410 (0.22/5W)	ACN1075		FUSE CLIP		AKR1003
	R513	-R515	RD1/2PM102J		CN2 CONNECTOR(7P)		KPE7
	R421	-R424	RD1/4PM100J	POWER TRANS ASSY			
	R305	,R306 ,R310	RD1/4PM103J	SEMICONDUCTORS			
	R303	,R304	RD1/4PM153J		D527		HSS104-02
	R507	-R509	RD1/4PM331J		D525 ,D526 ,D528		S5688G
	R311		RD1/4PM334J	CAPACITORS			
	R312		RD1/4PM680J		C528 ,C529 (0.01/150V)		ACG1005
	R505	,R506 ,R511	RD1/4PM821J		C525 ,C526 (1/100V)		ACH1237
△	R413	,R414	RD1/4PMFL392J		C524		CEAS101M63
△	R433	-R436 ,R441 ,R442	RFA1/4PS101J		C527		CEAS2R2M50
△	R309		RFA1/4PS221J		C523		CEEA221M63
△	R437	-R440	RFA1/4PS470J	RESISTORS			
△	R401	-R404 ,R443 ,R444	RFA1/4PS4R7J		R523 -R525 ,R529		RS1LMF103J
△	R503	,R504 ,R512 ,R519 ,R520	RFA1/4PS4R7J	△	Other Resistors		RD1/4PM□□□J
△	R431	,R432	RS1LMF681J	OTHERS			
△	R419	,R420	RS2LMF100J		CN1 CONNECTOR(3P)		KPE3
△	R429	,R430	RS2LMF331J	DIODE ASSY			
△	R510		RS2LMF392J	SEMICONDUCTORS			
△	R501	,R502	RS2LMF472J		D596		FMM-22R
	Other Resistors		RD1/8PM□□□J		D595		FMM-22S
OTHERS				REC OUT ASSY			
	SPEAKER TERMINAL 8-P		AKE1011	CAPACITORS			
	HEAT SINK M		ANH-813		C771 -C778		CCCSL221J50
	HEAT SINK		ANH-880	RESISTORS			
	CN7 CONNECTOR(11P)		KPE11		Other Resistors		RD1/8PM□□□J
POWER SW ASSY				OTHERS			
SEMICONDUCTORS					PIN JACK(8P)		AKB7029
	IC551		NJM78M56FAS		CN12 CONNECTOR(15P)		KPE15
	Q551		2SD1913	INPUT ASSY			
	Q552		XDC143ES		No service part		
	D557		HSS104-02	HEADPHONE ASSY			
	D556 ,D558		RD6.2ESB3	CAPACITORS			
	D554		RD6.8ESB		C491 ,C492		CKCYB392K50
	D551 -D553		S5688G	CAPACITORS			
COILS AND FILTERS					C491 ,C492		CKCYB392K50
△	L554	(1.0mH/250V)	ATF-163	CAPACITORS			
	L553		LAU220K		C491 ,C492		CKCYB392K50
TRANSFORMERS				CAPACITORS			
△	T551		ATT1229		C491 ,C492		CKCYB392K50
SWITCHES AND RELAYS				CAPACITORS			
△	RY551		ASR1036		C491 ,C492		CKCYB392K50
CAPACITORS				CAPACITORS			
△	C551 ,C552 ,C561 ,C562 (0.01/400V)		ACG1003		C491 ,C492		CKCYB392K50
	C580 (0.01/150V)		ACG1005	CAPACITORS			
	C560 (1/100V)		ACH1237		C491 ,C492		CKCYB392K50
	C557 ,C559		CEAS100M50	CAPACITORS			

1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "  " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

1.1 PARTS LIST (for A-604R/HE)

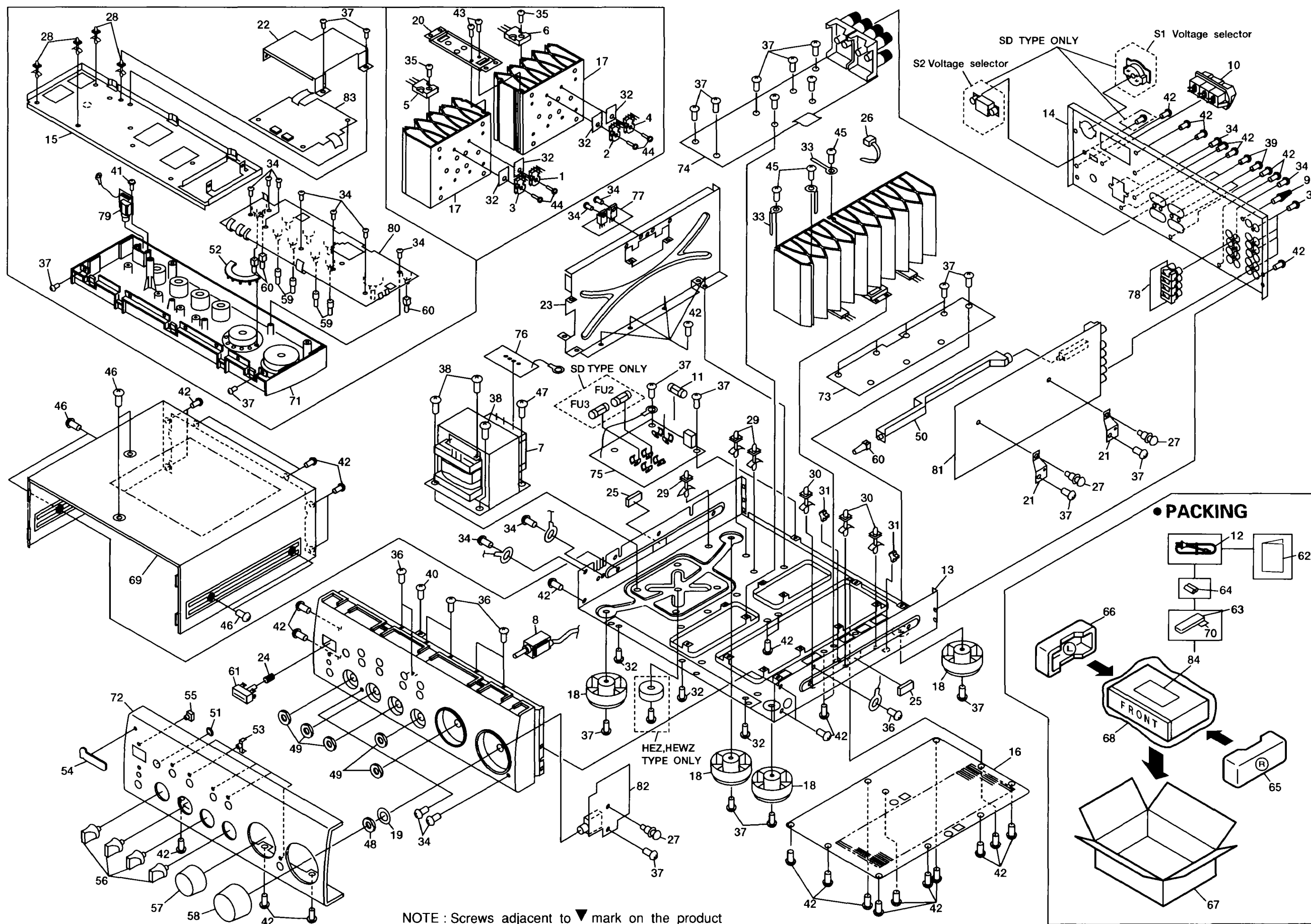
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Q3 TRANSISTOR	2SA1302		48	NUT	NK70FUC
	2	Q4 TRANSISTOR	2SA1302		49	NUT	NK90FUC
	3	Q1 TRANSISTOR	2SC3281		50	PUSH JOINT (PLS)	AMR2537
	4	Q2 TRANSISTOR	2SC3281				
	5	Q231 TRANSISTOR	2SC4137		51	REMOCON WINDOW(PLS)	AAK2457
					52	FUNCTION LENS (PLS)	AAK2458
	6	Q232 TRANSISTOR	2SC4137		53	LED LENS (PLS)	AAK2459
	7	T1 POWER TRANSFORMER	ATS1490		54	NAME PLATE (METAL)	AAM1058
	8	S3 SWITCH	ASU1047		55	LED LENS (ABS)	PNW2019
	9	TERMINAL SCREW	AKE-031				
	10	AC SOCKET 3-P	AKP-502		56	ROTARY KNOB S (PLS)	AAB1367
					57	ROTARY KNOB M	AAB1382
	11	FU1 FUSE(2.5A)	AEK-512		58	ROTARY KNOB L	AAB1385
	12	AC POWER CORD	ADG1127		59	PUSH BUTTON A (PLS)	AAD2430
NSP	13	CHASSIS (MET)	ANA1214		60	PUSH BUTTON B (PLS)	AAD2432
	14	REAR PANEL (MET)	ANC7240				
NSP	15	PANEL STAY (MET)	AND1057		61	POWER BUTTON (PLS)	AAD2434
					62	OPERATING INSTRUCTIONS	ARE7049
NSP	16	BOTTOM PLATE (MET)	ANF1102			(English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	
NSP	17	HEAT SINK (MET)	ANH1435		63	REMO- CON (CU-A013)	AXD7053
	18	FOOT	AMR2414	NSP	64	BATTERY (R6P,AA)	AEX-010
NSP	19	DAMPER	ABE1008		65	STYROL PROTECTOR R	AHA1599
NSP	20	HEAT SINK HOLDER (MET)	ANG1825				
					66	STYROL PROTECTOR L	AHA1600
NSP	21	PCB HOLDER (MET)	ANG1826		67	PACKING CASE	AHD7185
NSP	22	SHIELD PLATE A (MET)	ANK1244		68	PACKING SHEET	AHG1204
NSP	23	SHIELD PLATE B (MET)	ANK1245		69	BONNET CASE(MET)	ANE1418
	24	SPRING (FE)	ABH1089		70	BATTERY COVER	AZN2249
NSP	25	CUSHION (RUBBER)	AEB1074				
	26	NYLON BINDER	AEC-093		71	PANEL BASE (PLS)	AMB2136
	27	RIVET	AEC-441		72	FRONT PANEL (MET)	ANB7018
NSP	28	PCB SUPPORT	AEC1006		73	VOLTAGE AMP ASSY	AWZ4895
NSP	29	PCB SPACER	AEC1084		74	POWER AMP ASSY	AWZ7706
NSP	30	PCB SUPPORT	AEC1231		75	POWER SW ASSY	AWZ7707
	31	PCB HOLDER	AEC1520				
	32	SHEET	AEE1014	NSP	76	POWER TRANS ASSY	AWZ7759
NSP	33	BINDER	AEF1004		77	DIODE ASSY	AWZ7763
	34	SCREW	ABA-298		78	REC OUT ASSY	AWZ7842
	35	SCREW (STEEL)	ABA1007		79	HEADPHONE ASSY	AWZ4885
					80	TONE ASSY	AWZ7766
	36	SCREW (STEEL)	ABA1009				
	37	SCREW (STEEL)	ABA1011		81	INPUT ASSY	AWZ7806
	38	SCREW (STEEL)	ABA1014		82	VOLUME ASSY	AWZ7724
	39	SCREW (STEEL)	ABA1050		83	MPU ASSY	AWZ7758
	40	SCREW	ABA1052		84	LITERATURE BAG	AHG-117
	41	SCREW (STEEL)	ABA1095				
	42	SCREW (STEEL)	ABA1192				
	43	SCREW (STEEL)	ABA1193				
	44	SCREW (STEEL)	ABA1194				
	45	SCREW	BPZ30P120FZK				
	46	SCREW (STEEL)	FBT40P060FZK				
	47	SCREW	FBT40P120FCU				

A

B

C

D



NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

2. PCB PARTS LIST

(for A-604R/HE)

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The $\triangle$ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohms and 47k ohms (Tolerance is shown by J = 5%, and K = 10%).

560 Ω $\rightarrow$ 56 $\times 10^1 \rightarrow$ 561 ----- RD1/8PM 5 6 1 J

47k Ω $\rightarrow$ 47 $\times 10^3 \rightarrow$ 473 ----- RD1/4PS 4 7 3 J

0.5 Ω $\rightarrow$ 0R5 ----- RN2H 0 5 K

1 Ω $\rightarrow$ 010 ----- RS1P 0 1 0 K

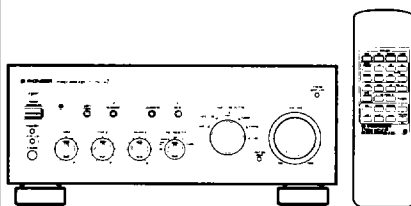
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 k Ω $\rightarrow$ 562 $\times 10^1 \rightarrow$ 5621 ----- RN1/4PC 5 6 2 1 F

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
LIST OF ASSEMBLIS							
NSP	AF ASSY		AWK7172		C245 ,C246		CKCYF103Z50
	VOLTAGE AMP ASSY		AWZ4895		C229 ,C230 ,C233 ,C234		CKCYF223Z50
	POWER AMP ASSY		AWZ7706	RESISTORS			
	POWER SW ASSY		AWZ7707		R285 ,R286 ,R291 ,R292		RD1/2PM222J
	POWER TRANS ASSY		AWZ7759		R267 -R270		RD1/2PM472J
NSP	DIODE ASSY		AWZ7763		R205 -R208		RD1/4PM100J
	REC OUT ASSY		AWZ7842		R217 -R220 ,R227 -R234		RD1/4PM101J
					R273 -R276		RD1/4PM101J
					R203 ,R204		RD1/4PM104J
					R293 ,R294		RD1/4PM112J
NSP	INPUT ASSY		AWK7180		R245 ,R246		RD1/4PM122J
	HEADPHONE ASSY		AWZ4885		R271 ,R272		RD1/4PM221J
	TONE ASSY		AWZ7766		R243 ,R244		RD1/4PM222J
	INPUT ASSY		AWZ7806		R225 ,R226		RD1/4PM224J
					R235 -R238		RD1/4PM225J
NSP	CONTROL COMPLEX ASSY		AWP7003		R279 ,R280		RD1/4PM470J
	VOLUME ASSY		AWZ7724		R221 -R224		RD1/4PM473J
	MPU ASSY		AWZ7758		R239 -R242		RD1/4PM512J
				$\triangle$	R251 ,R252		RD1/4PMF561J
				$\triangle$	R213 -R216 ,R247 -R250		RFA1/4PS101J
				$\triangle$	R253 -R256		RFA1/4PS271J
				$\triangle$	R281 -R284		RFA1/4PS4R7J
					VR201 ,VR202 (100 Ω)		ACP1037
					VR203 ,VR204 (47k)		ACP1045
					Other Resistors		RD1/8PM□□□□
				OTHERS			
					CN18 CONNECTOR(12P)		KPE12
				POWER AMP ASSY			
				SEMICONDUCTORS			
					Q307		2SA1115
					Q403 ,Q404		2SA1306
					Q502		2SA992
					Q504		2SB1274
					Q301 ,Q302 ,Q501 ,Q506		2SC1845
					Q309		2SC2235
					Q303 -Q306 ,Q308		2SC2458
					Q401 ,Q402		2SC3298
					Q503 ,Q505		2SD1913
					D301 -D304 ,D504 -D506		HSS104-02
					D305		RD15ESB2
					D503		RD27ESB2
					D501 ,D502		RD30ESB2
				SWITCHES AND RELAYS			
					RY401 ,RY402		ASR-112
					RY403		ASR1005

Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
ARP2890

STEREO AMPLIFIER

A-604R

A-604R-G

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	A-604R	A-604R-G		
HE	○	—	AC 220V - 230V	AC 240V , *
HEZ	—	○	AC 220V - 230V	AC 240V , *
HEWZ	○	—	AC 220V - 230V	AC 240V , *
SD	○	—	AC 110,120V - 127V, 220V,240V	With the voltage selector

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

- For the following: A-604R/HEWZ and SD; A-604R-G/HEZ, refer to page 32.

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OTHERS

JACK
CONNECTOR (6P)

AKN1025
KPE6

Q114
Q101 ,Q102
D109

2SC2235
2SK389
RD18ESB3

TONE ASSY

SEMICONDUCTORS

IC601
Q603 ,Q604
Q605 ,Q606
Q609 ,Q610 ,Q620 ,Q623 ,Q624
Q601 ,Q602
Q622 ,Q625 ,Q626
Q612 -Q619
D603 ,D604 ,D607 -D609
D605
D610 -D615
D601 ,D602 ,D606 ,D616 -D620

M5220L
2SA992
2SC1845
2SC2458
2SK246
XDA124ES
XDC143ES
AEL1065
AEL1084
AEL1099
HSS104-02

SWITCHES AND RELAYS

S606
S602 ,S608
S607 ,S609
S604
S601 ,S603
S605

ASD1026
ASG1019
ASG1028
ASG1029
ASG1030
ASG1054

CAPACITORS

C623 ,C624
C601 ,C602
C627 ,C628
C607 ,C608
C609 -C612
C647 ,C648
C603 ,C604
C631 ,C632
C625 ,C626 ,C639
C621 ,C622
C629 ,C630
C641
C605 ,C606
C645 ,C646
C617 ,C618
C643 ,C644
C637 ,C638
C613 ,C614
C651 ,C652
C619 ,C620
C649 ,C650
C615 ,C616

CCCSL121J50
CCCSL150J50
CCCSL390J50
CCCSL470J50
CEANP101M10
CEANP2R2M50
CEANP4R7M50
CEAS010M50
CEAS100M50
CEAS2R2M50
CEAS470M25
CEASR22M50
CFTXA823J50
CKCYB102K50
CKCYB332K50
CKCYB391K50
CKCYF103Z50
CKCYX103M25
CKCYX223M25
CKCYX273M25
CKCYX333M25
CKCYX473M25

RESISTORS

R660
R658
R659
R611 -R614
VR602 ,VR603 (100k×2)
VR601 (100k×2)
Other Resistors

RD1/4PM131J
RD1/4PM151J
RD1/4PM271J
RD1/4PM472J
ACT1074
ACT1075
RD1/8PM□□□J

OTHERS

8205 CABLE HOLDER
8210 CABLE HOLDER
601 REMOTE RECEIVER UNIT

AKT1007
AKT1011
AXX1023

INPUT ASSY

SEMICONDUCTORS

IC101
Q701 ,Q702
Q103 -Q106 ,Q703 ,Q704

M5220P
2SA992
2SC1845

CILS AND FILTERS
L101 ,L102 (270mH)

ATH1010

SWITCHES AND RELAYS

S701
S101
S702

ASD1017
ASG1053
ASU1016

CAPACITORS

C105 ,C106
C129 ,C701 -C710
C109 ,C110
C715 ,C716
C111 ,C112
C119 ,C120
C123 ,C124
C729 -C732
C721 -C724
C717 -C720
C101 ,C102
C113 ,C114
C115 ,C116
C117 ,C118
C107 ,C108
C127 ,C128 ,C130 ,C132 ,C133
C727 ,C733 ,C734
C125 ,C126
C121 ,C122

CCCSL151J50
CCCSL221J50
CCCSL271J50
CCCSL470K500
CEAS221M25
CEAS3R3M50
CEAS470M25
CEEA100M50
CEEA331M25
CEEA470M25
CFTXA103J50
CFTXA123J50
CFTXA183J50
CFTXA333J50
CKCYB472K50
CKCYF103Z50
CKCYF103Z50
CQMA272J50
CQMA472J50

RESISTORS

R135 ,R136 ,R149 ,R150 ,R160
R103 ,R104 ,R723 ,R724
R737 ,R738
R721 ,R722 ,R725 ,R726
R109 ,R110
R119 ,R120
R115 ,R116
R747 -R750
R711 -R716
R121 ,R122
R141 ,R142
R111 -R114
R729 -R732
R105 ,R106
R727 ,R728 ,R733 ,R734
R107 ,R108 ,R139 ,R140
R735 ,R736
R154
R117 ,R118
R161 ,R162
R123 ,R124
R137 ,R138
R129 ,R130
R133 ,R134
R131 ,R132
R127 ,R128
R125 ,R126
Other Resistors

RD1/4PM100J
RD1/4PM101J
RD1/4PM101J
RD1/4PM104J
RD1/4PM151J
RD1/4PM153J
RD1/4PM182J
RD1/4PM220J
RD1/4PM221J
RD1/4PM225J
RD1/4PM331J
RD1/4PM332J
RD1/4PM470J
RD1/4PM471J
RD1/4PM472J
RD1/4PM473J
RD1/4PM473J
RD1/4PM562J
RD1/4PM680J
RDR1/4PM102F
RDR1/4PM121F
RDR1/4PM391F
RDR1/4PM512F
RDR1/4PM560F
RDR1/4PM623F
RDR1/4PM8R2F
RDR1/4PM910F
RD1/8PM□□□J

OTHERS

PIN JACK (6P)
PIN JACK (4P)
CN8105 PIN JACK (2P)
CN13 CONNECTOR (12P)
CN10 CONNECTOR (15P)

AKB7012
AKB7015
AKB7028
KPE12
KPE15

CONTROL COMPLEX ASSY

No service part

VOLUME ASSY**S E M I C O N D U C T O R S**

IC801	M5220P
Q802	2SA965
Q801	2SC2235
Q805 ,Q806	2SJ103
Q803 ,Q804	2SK246
D801 ,D802	RD24ESB3

C A P A C I T O R S

C805 ,C806	CCCSL180K500
C807 ,C808	CCCSL271K500
C803 ,C804	CCCSL470K500
C819 ,C820	CEAS100M50
C815 ,C816	CEAS101M50
C801 ,C802	CEAS220M50
C817 ,C818	CEAS470M50
C809 ,C810	CEZA101M25
C813	CKCYF103Z50

R E S I S T O R S

▲ R821 ,R822	RFA1/4PS4R7J
▲ R819 ,R820	RS1LMF821J
VR801 (20K×2)	ACX1085
Other Resistors	RD1/4PM□□□J

O T H E R S

CN4 CONNECTOR (13P)	KPE13
CN21 CONNECTOR (3P)	KPE3
CN5 CONNECTOR (8P)	KPE8

MPU ASSY**S E M I C O N D U C T O R S**

IC901	PD5224A
IC902 ,IC903	TA8409S
Q902	2SA1048
Q903	2SC2458
Q906	XDA124ES
Q901 ,Q904 ,Q905	XDC124ES
D901 -D909 ,D911 -D913	HSS104-02
D915 ,D916	HSS104-02
D910	RD6.2ESB

C O I L S A N D F I L T E R S

L901 ,L940 -L942	LAU220K
------------------	---------

C A P A C I T O R S

C904 (47mF/5.5)	ACH1246
C919	CCMSL101J50
C912	CEAS2R2M50
C901 ,C903 ,C915 ,C916	CEAS470M25
C902 ,C918 ,C920 -C922	CKCYF103Z50
C905 -C911 ,C913 ,C914 ,C917	CKMYB271K50

R E S I S T O R S

R901	RD1/4PM101J
Other Resistors	RD1/8PM□□□J

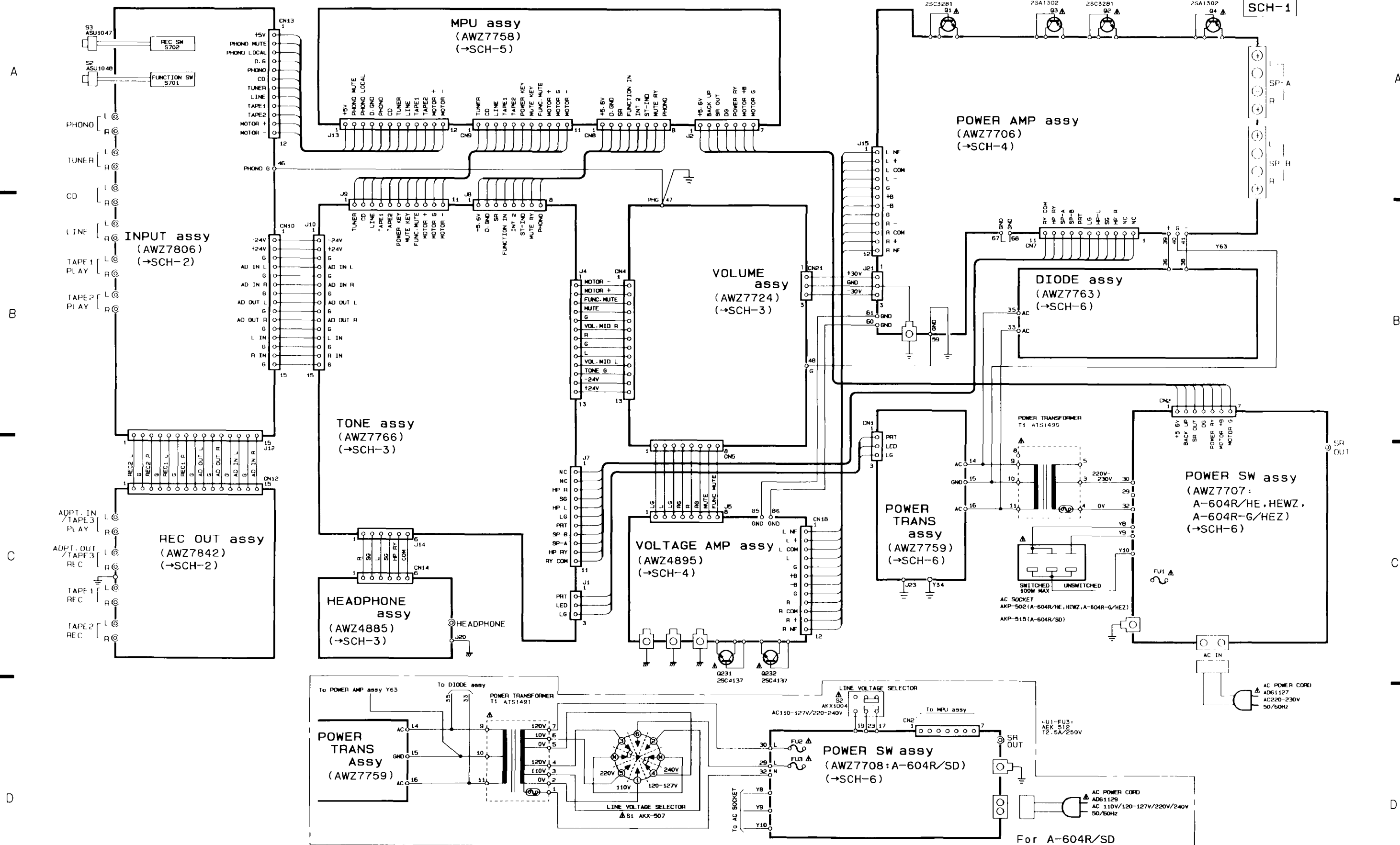
O T H E R S

X901 CERAMIC RESONATOR(4.19MHz)	ASS1018
CN9 CONNECTOR (11P)	KPE11
CN8 CONNECTOR (8P)	KPE8

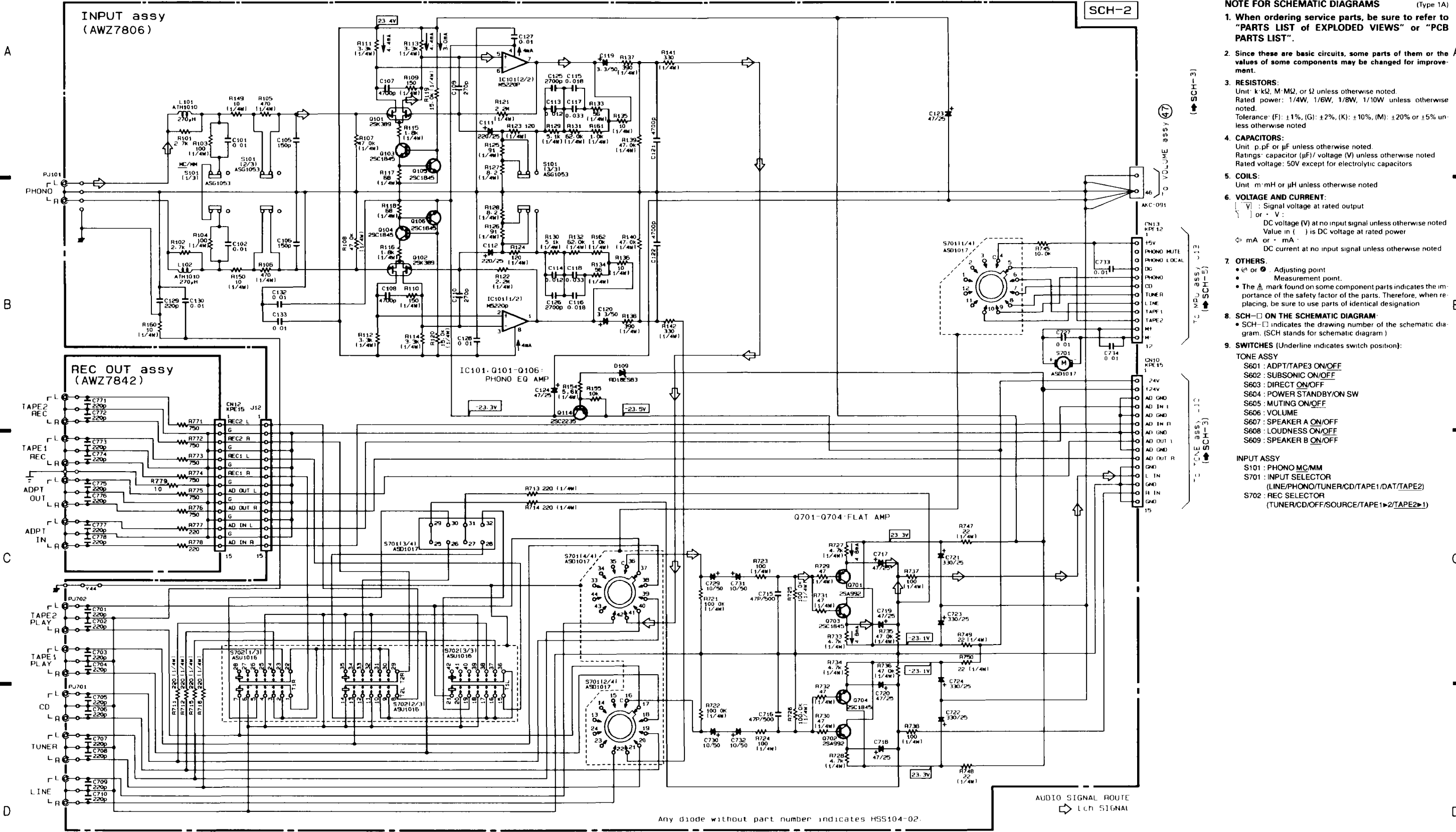
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

3.1 OVERALL WIRING DIAGRAM

A-604R, A-604R-G



3.2 INPUT AND REC OUT ASSEMBLIES



NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. **RESISTORS:**
Unit: k Ω , M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.

4. **CAPACITORS:**
Unit: pF or μ F unless otherwise noted.
Ratings: capacitor (μ F)/voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. **COILS:**
Unit: mH or μ H unless otherwise noted.

6. **VOLTAGE AND CURRENT:**
[V]: Signal voltage at rated output
[V]: DC voltage (V) at no input signal unless otherwise noted
[V]: DC voltage at rated power
[mA] or [mA]: DC current at no input signal unless otherwise noted

7. **OTHERS:**
• $\odot$ or $\odot$: Adjusting point
• Δ : Measurement point
• The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. **SCH-□ ON THE SCHEMATIC DIAGRAM:**
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. **SWITCHES** (Underline indicates switch position):

TONE ASSY
S601: ADPT/TAPE3 ON/OFF
S602: SUBSONIC ON/OFF
S603: DIRECT ON/OFF
S604: POWER STANDBY/ON SW
S605: MUTE ON/OFF
S606: VOLUME
S607: SPEAKER A ON/OFF
S608: LOUDNESS ON/OFF
S609: SPEAKER B ON/OFF

INPUT ASSY
S101: PHONO MC/MM
S701: INPUT SELECTOR
(LINE/PHONO/TUNER/CD/TAPE1/DAT/TAPE2)
S702: REC SELECTOR
(TUNER/CD/OFF/SOURCE/TAPE1 $\rightarrow$ 2/TAPE2 $\rightarrow$ 1)

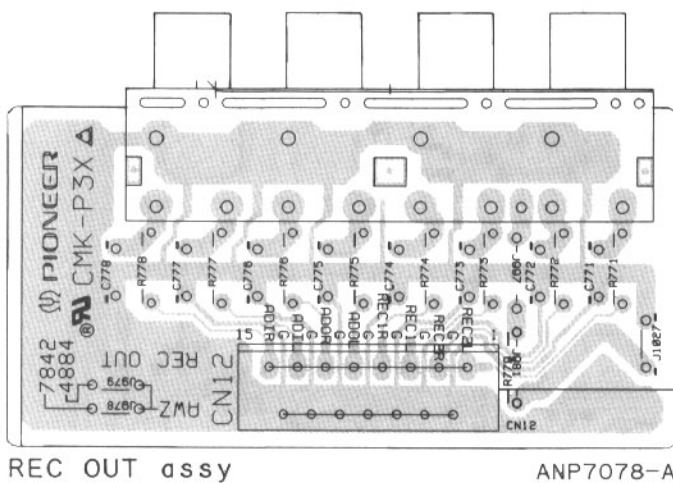
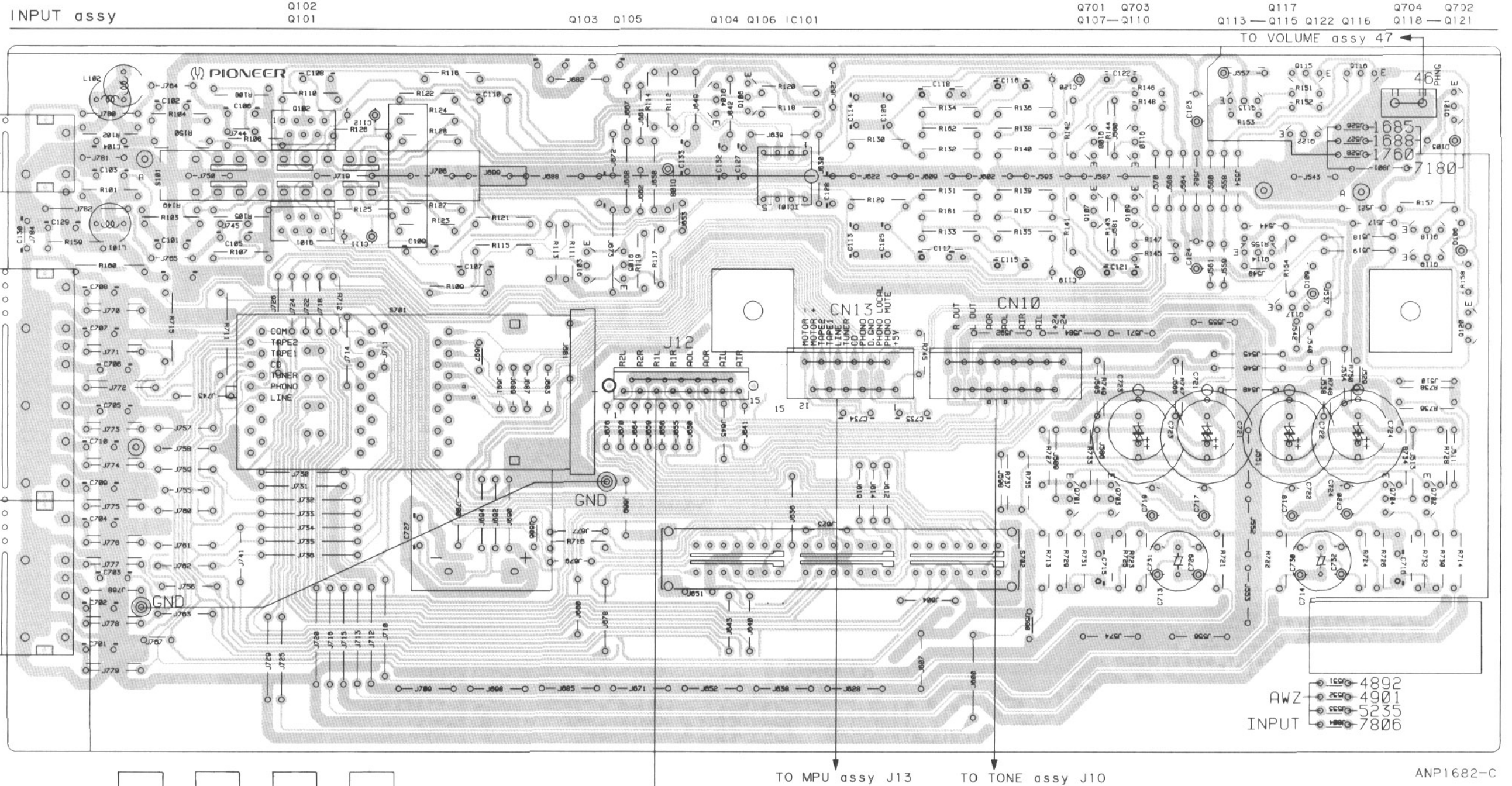
SCH-2

INPUT ASSY,
REC OUT ASSY

INPUT ASSY,
REC OUT ASSY

SCH-2

● This diagram is viewed from the mounted parts side.



NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

3. The transistor terminal marked with E or $\bar{C}$ shows the emitter.
4. The diode terminal marked with $\odot$ or $\bar{C}$ shows cathode side.
5. The capacitor terminal marked with $\odot$ or $\bar{C}$ shows negative terminal.
6. The parts mounted on each PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

- This diagram is viewed from the mounted parts side.



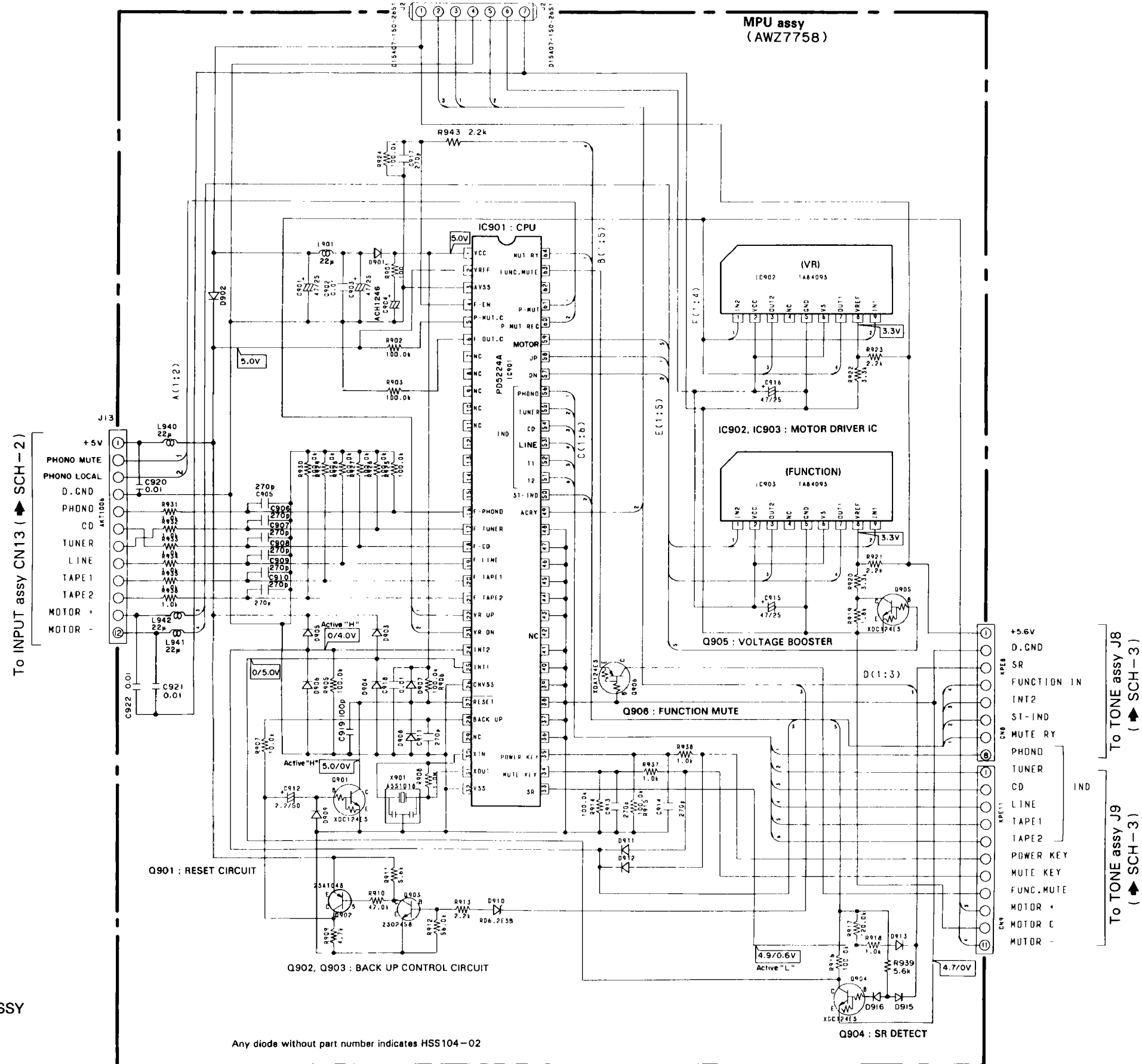


PCB-3



To POWER SW assy CN2 (➡ SCH-6)

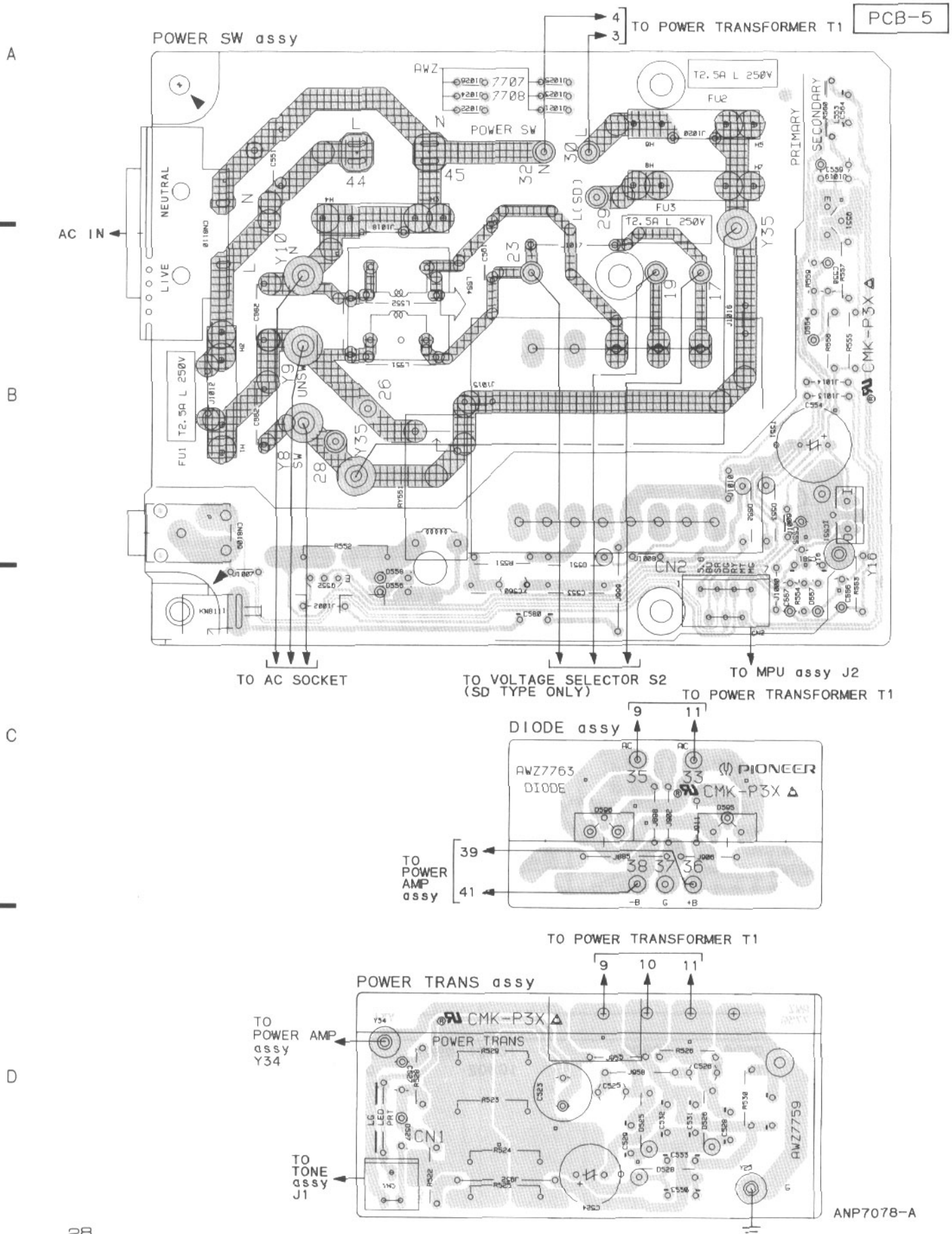
SCH-5



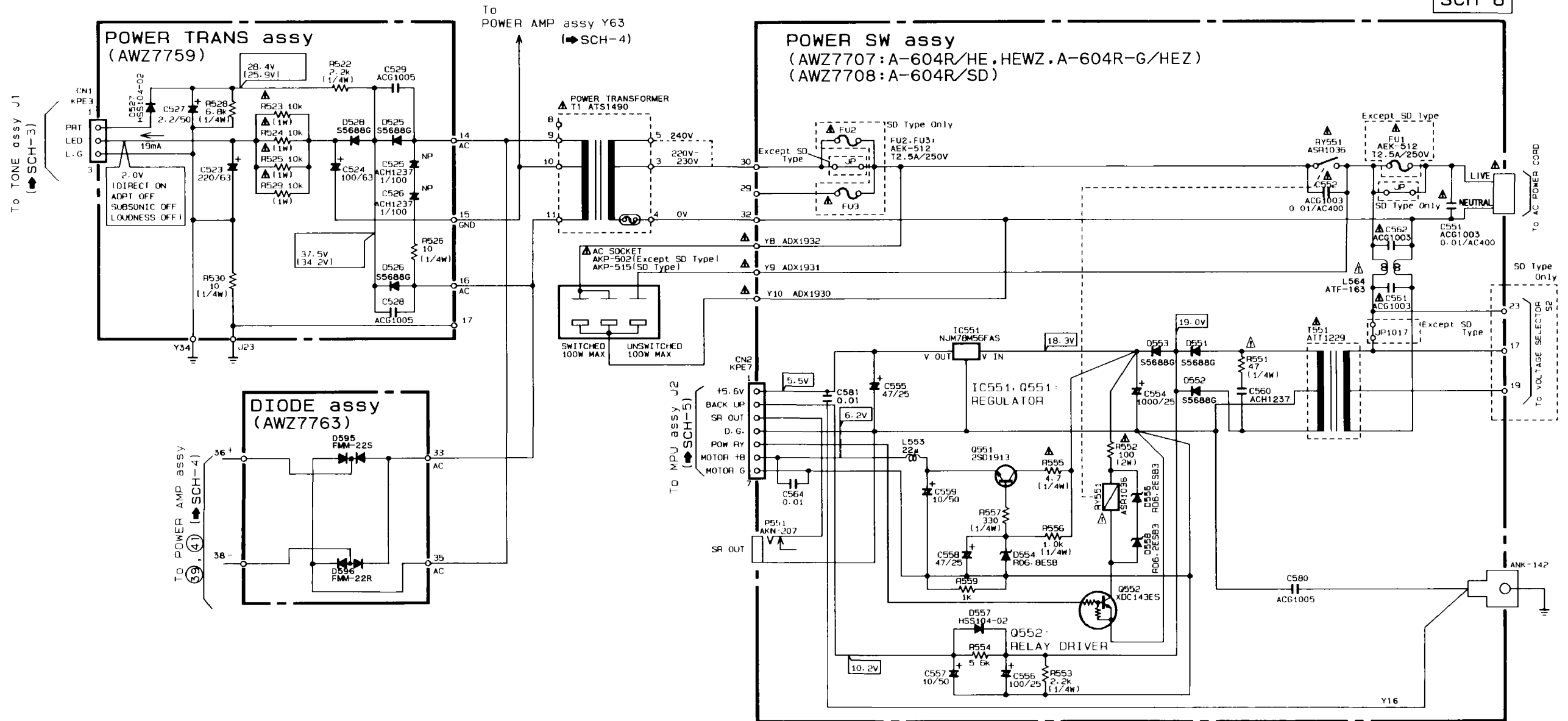


3.6 POWER SW, POWER TRANS AND DIODE ASSEMBLIES

● This diagram is viewed from the mounted parts side.



SCH-6



Line Voltage Selection

Line Voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the connection with the power transformer (T1) primary taps.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

SCH-6

POWER SW ASSY,
POWER TRANS ASSY,
DIODE ASSY

POWER SW ASSY,
POWER TRANS ASSY,
DIODE ASSY

SCH-6

4. ADJUSTMENTS

1) IDLE CURRENT ADJUSTMENT

1. Connect the measuring instrument as Fig. 4-1. (R409 or 410)
2. Set the VOLUME CONTROL to minimum.
3. Set the POWER switch to ON.
4. Adjust VR203 (VR204) so that the voltage between both sides of R409 (R410) becomes $16\text{mV} \pm 3\text{mV}$.

Note)

After turning on the power, wait at least 5 minutes before adjustment.

2) DC OFFSET ADJUSTMENT

1. Connect the measuring instrument as Fig. 4-1. (SP terminal)
2. Adjust VR201 (VR202) so that the voltage between speaker terminal becomes $0\text{mV} \pm 20\text{mV}$.

Note)

After turning on the power, wait at least 5 minutes before starting the adjustment and complete the adjustment within 10 minutes after turning on the power.

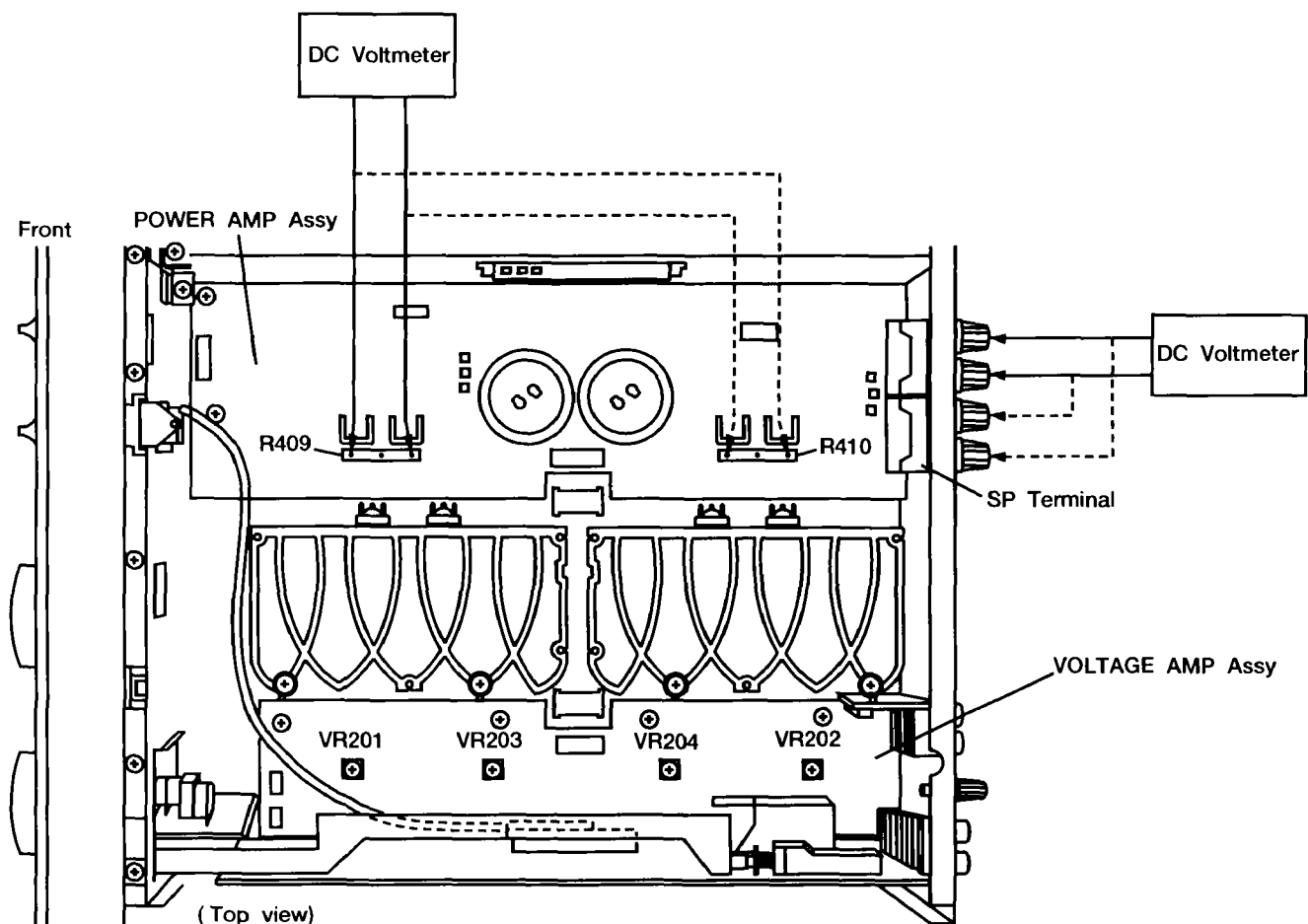


Fig. 4-1 Adjustment Method

5. FOR A-604R/ HEWZ , SD AND A-604R-G/HEZ

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " $\odot$ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

CONTRAST OF MISCELLANEOUS PARTS

A-604R/HEWZ, SD, A-604R-G/HEZ and A-604R/HE have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		A-604R			A-604R-G	
		HE	HEWZ	SD	HEZ	
NSP	AF assembly	AWK7172	AWK7172	AWK7173	AWK7172	For insulator
	POWER SW assembly	AWZ7707	AWZ7707	AWZ7708	AWZ7707	
Δ	S1 Voltage selector (AC110V/120-127V/220V/240V)	Not used	Not used	AKX-507	Not used	
Δ	S2 Voltage selector (AC110-127V/220-240V)	Not used	Not used	AKX1004	Not used	
Δ	T1 Power transformer (AC220-230V/240V)	ATS1490	ATS1490	Not used	ATS1490	
Δ	T1 Power transformer (AC110V/120-127V/220V/240V)	Not used	Not used	ATS1491	Not used	
Δ	AC outlet	AKP-502	AKP-502	AKP-515	AKP-502	
Δ	FU2 Fuse(2.5A)	Not used	Not used	AEK-512	Not used	
Δ	AC power cord	ADG1127	ADG1127	ADG1129	ADG1127	
	Screw	Not used	ABA1063	Not used	ABA1063	
	Rear panel (MET)	ANC7240	ANC7240	ANC2081	ANC7240	
	Insulator	Not used	AMR2622	Not used	AMR2622	
NSP	Cushion	AEB1074	AEB1074	Not used	AEB1074	
	Screw	FTB40P060FZK	FTB40P060FZK	FTB40P060FZK	FTB40P060FNI	For bonnet case
	Front panel (MET)	ANB7018	ANB7018	ANB7018	ANB7019	
	Panel base (PLS)	AMB2136	AMB2136	AMB2136	AMB2137	
	Badge (PIONEER)	AAM1058	AAM1058	AAM1058	VAM1051	
	Round knob S (PLS)	AAB1367	AAB1367	AAB1367	AAB1368	
	Round knob M (PLS)	AAB1382	AAB1382	AAB1382	AAB1384	
	Round knob L (PLS)	AAB1385	AAB1385	AAB1385	AAB1386	
	Push button A (PLS)	AAD2430	AAD2430	AAD2430	AAD2431	
	Push button B (PLS)	AAD2432	AAD2432	AAD2432	AAD2433	
	Power button (PLS)	AAD2434	AAD2434	AAD2434	AAD2435	
NSP	Bonnet case (MET)	ANE1418	ANE1418	ANE1418	ANE1419	
	Operating instructions (English / French / German/Italian / Swedish / Dutch / Spanish / Portuguese)	ARE7049	Not used	ARE7050	ARE7049	
	Operating instructions (German)	Not used	ARE7073	Not used	Not used	
	Remote control (CU-A013)	AXD7053	AXD7053	AXD7053	Not used	
	Remote control (CU-A015)	Not used	Not used	Not used	AXD7054	
	Battery cover	AZN2249	AZN2249	AZN2249	AZN7225	
	Side PadA L	AHA1600	AHA1658	AHA1600	AHA1658	
	Packing case	AHD7185	AHD7185	AHD7186	AHD7187	

AF ASSEMBLY

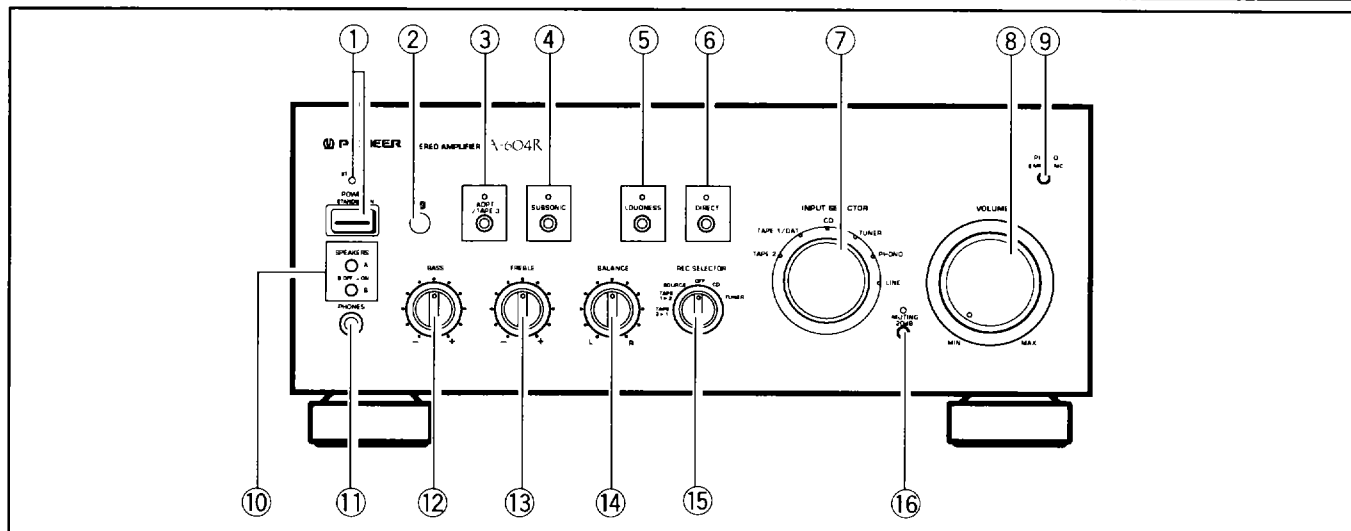
Although AWK7173 and AWK7172 are different in part number, they have the same service parts.

POWER SW ASSEMBLY

Although AWZ7708 and AWZ7707 are different in part number, they have the same service parts.

6. PANEL FACILITIES

FRONT PANEL



① POWER STANDBY/ON switch/indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. When the STANDBY indicator lights, the unit is in STANDBY.

NOTE:

When performing timer recording with this unit, be sure to set the POWER STANDBY/ON switch to ON.

② Remote control sensor window

③ ADPT (adaptor)/TAPE 3 button/indicator

Use this button to listen to tape playback, or to monitor a tape recording.

On: (Red illumination)

The indicator lights: Press when listening to the playback sound of the cassette deck or the adaptor connected to the ADPT/TAPE 3 IN/PLAY jacks, or to monitor the sound recorded on the cassette deck connected to the ADPT/TAPE 3 OUT/REC jacks.

Off:

The indicator goes off: Normally leave the button in this position.

NOTE:

When the DIRECT button is set to on, this function does not operate and no signal is output at the ADPT/TAPE 3 OUT/REC jacks.

When the DIRECT button is in the off position, only the source signal is output from the ADPT/TAPE 3 OUT/REC jack.

④ SUBSONIC filter button/indicator

Use this button, when playing records with coarse grooves.

On: (Red illumination)

The indicator lights: In this position, frequencies of 17 Hz and below are cut, eliminating super-low frequency noise caused by coarse record grooves and thus helping prevent sound distortion.

Off:

The indicator goes off: Leave in this position for normal playback.

NOTE:

This button does not operate when the DIRECT button is in the on position. This button operates when PHONO is selected by the INPUT SELECTOR switch (refer to 9 on page 34).

⑤ LOUDNESS button/indicator

Use when listening at low volume level.

On: (Red illumination)

The indicator lights: Boosts low and high frequencies to give added punch to playback even at low volume level.

Off:

The indicator goes off: Should normally be left in this position.

NOTE:

• This button does not operate when the DIRECT button is in the on position.

• At volume levels below the 10 o'clock position, the LOUDNESS effect is obtained.

• At volume levels above the 10 o'clock position, the effect becomes increasingly weaker.

⑥ DIRECT button/indicator

Use this button when you wish to bypass the various frequency adjusting circuits and adaptor jacks (ADPT/TAPE 3, SUBSONIC, BASS, TREBLE, BALANCE, LOUDNESS).

On: (Orange illumination)

When this button is in this position, the indicator lights and the signals input from the input jacks are reproduced without passing through the various frequency-adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

Off:

When the button is in this position the indicator goes out and the signal passes through the various frequency adjusting circuits.

⑦ INPUT SELECTOR switch

Use to select the playback source. The selected source's indicator lights. Even if you switch the power off, the last selected source is memorized.

LINE:

Set to this position when listening to a program from a component connected to the LINE jacks.

PHONO:

Set to this position when listening to record playback on a turntable.

TUNER:

Set to this position when listening to AM or FM broadcasts with a tuner.

CD:

Set to this position when listening to a compact disc playback with a CD player.

TAPE 1/DAT:

For playback with a cassette deck or digital audio tape deck connected to the TAPE 1/DAT jacks.

TAPE 2:

For playback with a cassette deck connected to TAPE 2 jacks.

⑧ VOLUME control

Use to adjust the volume level.

NOTE:

This unit is equipped with a circuit that attenuates LOUDNESS and tone effects as volume is turned up.

⑨ PHONO selector button

Set in accordance with the type of cartridge used in your turntable.

MM (—) Released position:

Set to this position when using a moving magnet cartridge, or a MC (moving coil) cartridge with high output of 1 mV or more.

MC (_) Depressed position:

Set to this position when using a moving coil cartridge.

⑩ SPEAKERS selector buttons

Use these buttons to listen to the speaker systems connected to SPEAKERS terminals.

OFF (—) Released position:

No sound is heard from the speaker systems. Set to this position when listening with headphones.

ON A (_) Depressed position:

For reproduction of sound with the speaker system connected to the SPEAKERS A terminals.

ON B (_) Depressed position:

For reproduction of sound with the speaker system connected to the SPEAKERS B terminals.

⑪ PHONES jack

When using headphones, insert the plug into this jack. (When you want to listen with headphones only, refer to ⑩.)

⑫ BASS tone control

Use to adjust the low-frequency tone at a low volume level. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTES:

- This function does not operate when the DIRECT button is in the on position.
- At volume levels below the 10 o'clock position, the set tone control effect is obtained.
- At volume levels above the 10 o'clock position, the effect becomes increasingly weaker.

⑬ TREBLE tone control

Use to adjust the high-frequency tone at a low volume level. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTES:

- This function does not operate when the DIRECT button is in the on position.
- At volume levels below the 10 o'clock position, the set tone control effect is obtained.
- At volume levels above the 10 o'clock position, the effect becomes increasingly weaker.

⑭ BALANCE control

Should normally be left in the center position. Adjust the balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L (left) position and if the left side is louder, turn toward the R (right) position.

NOTE:

This function does not operate when the DIRECT button is in the on position.

⑮ REC SELECTOR switch

Switch to select recording signal. When set at other positions than SOURCE or OFF, signals can be recorded during playback of the equipment selected.

TUNER:

To record from a TUNER.

CD:

To record from a CD player.

OFF:

In this position, nothing from the REC jacks of TAPE 1/DAT and TAPE 2 will be output. Select it when not recording; output to cassette decks will be disconnected, improving sound quality.

SOURCE:

To record the equipment selected.

TAPE:

1 3 2:

To record (copy) from the cassette deck of TAPE 1/DAT jacks, over to the cassette deck of TAPE 2 jacks.

2 3 1:

To record (copy) from the cassette deck of TAPE 2 jacks, over to the cassette deck of TAPE 1/DAT jacks.

NOTE:

The REC SELECTOR switch has no effect on the recording output of the ADPT/TAPE 3 jacks.

⑯ MUTING button/indicator

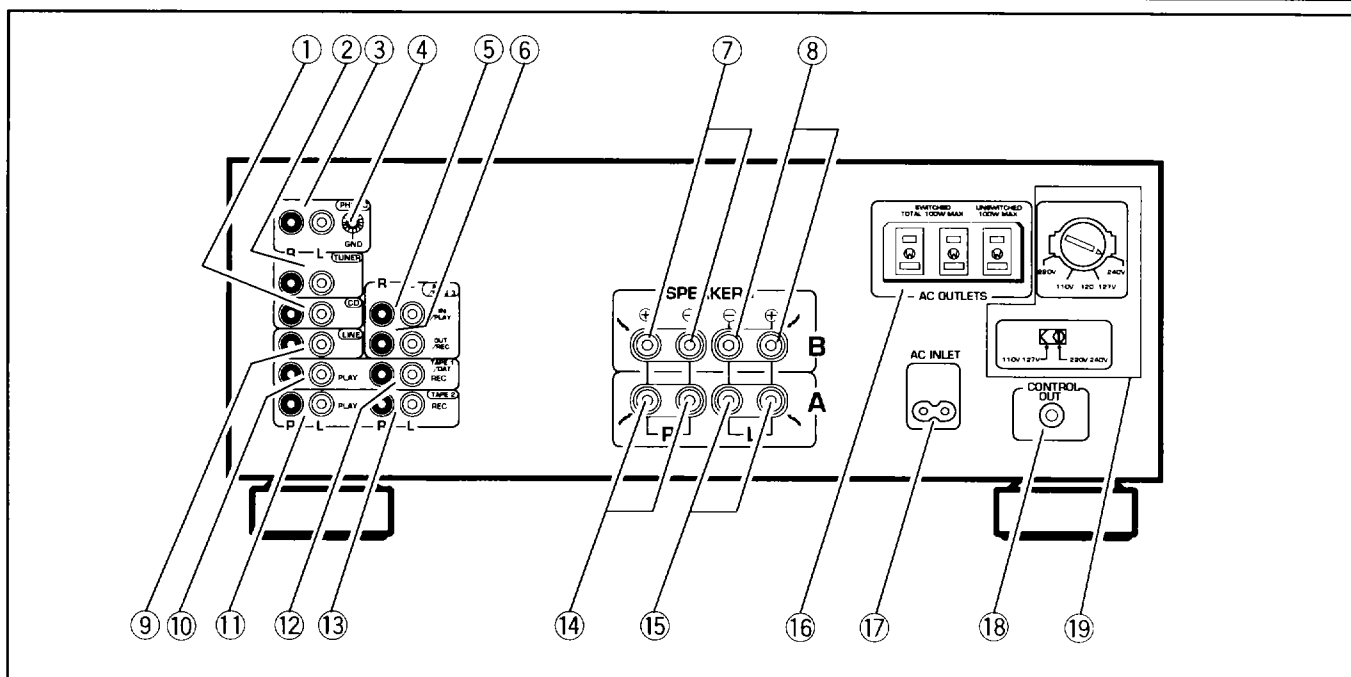
Use to temporarily cut sound volume.

On: (Red illumination)

The indicator lights: The sound volume will be reduced -20 dB.

Off:

The indicator goes off: The sound will return to its previous volume.

REAR PANEL


① CD jacks

② TUNER jacks

③ PHONO jacks

④ GND (Turntable ground) terminal

⑤ ADPT/TAPE 3 IN/PLAY jacks

⑥ ADPT/TAPE 3 OUT/REC jacks

⑦ SPEAKERS B terminals (Right channel)

⑧ SPEAKERS B terminals (Left channel)

⑨ LINE jacks

⑩ TAPE 1/DAT PLAY jacks

⑪ TAPE 2 PLAY jacks

⑫ TAPE 1/DAT REC jacks

⑬ TAPE 2 REC jacks

⑭ SPEAKERS A terminals (Right channel)

⑮ SPEAKERS A terminals (Left channel)

⑯ AC OUTLETS

⑰ AC INLET jack

Connect one end of the power cord to here and the other end to an AC wall socket, or the AC outlet of an audio timer. If you are going to be away from home for a long period of time, disconnect the unit from the wall socket.

⑱ CONTROL OUT jack

⑲ VOLTAGE SELECTORS

7. SPECIFICATIONS

(for A-604R/HE)

Amplifier Section

Continuous power output

(both channels driven at 20 Hz to 20 kHz)**

T.H.D. 0.015 %, 8 Ω 70 W + 70 W*

T.H.D. 0.03 %, 4 Ω 100 W + 100 W*

DIN Continuous power output (both channels driven at 1 kHz)

T.H.D. 1.0 %, 8 Ω 80 W + 80 W

T.H.D. 1.0 %, 4 Ω 120 W + 120 W

Power bandwidth

0.05 %, 8 Ω 5 Hz - 80 kHz*

Damping factor

(1 kHz/ 20 Hz to 20 kHz), 8 Ω 160/ 140

Dynamic power output (on EIA dynamic test signal)

4 Ω / 2 Ω 150 W/ 200 W

Total harmonic distortion**

20 Hz to 20 kHz

(continuous power output/ - 3 dB), 8 Ω 0.009 %*

Inter-modulation distortion (at rated output) 0.015 %*

• Above specifications are for when power supply is 230V.

Input sensitivity/ impedance

PHONO (MM) 2.8 mV/ 50 k Ω

PHONO (MC) 0.24 mV/ 100k Ω

CD, TUNER, LINE, TAPE 200 mV/ 50 k Ω

PHONO overload level

1 kHz, T.H.D. 0.1 % (MM/ MC) 200 mV/ 19 mV

Output level/ impedance

TAPE REC, ADAPTOR OUTPUT 200 mV/ 1 k Ω

Frequency response

PHONO (MM) 20 Hz to 20 kHz $\pm$ 0.2 dB

PHONO (MC) 20 Hz to 20 kHz $\pm$ 0.3 dB

CD, TUNER, LINE, TAPE 1 Hz to 150kHz $\pm$ ₃⁰ dB*

Tone control (volume control set at - 30 dB position)

BASS $\pm$ 8 dB (100 Hz)

TREBLE $\pm$ 8 dB (10 kHz)

Loudness contour (volume control set at - 30 dB position)

..... + 5 dB (100 Hz)/ + 3 dB (10 kHz)

Filter (SUBSONIC) 17 Hz (12 dB/ oct.)

Muting - 20dB

Signal-to-Noise ratio (IHF short circuit, A network)

PHONO (MM, 5 mV input/ MC, 0.5 mV input) ... 90 dB/ 76 dB*

CD, TUNER, LINE, TAPE 110 dB*

Signal-to-Noise ratio (DIN, continuous power/ 50 mW)

PHONO (MM) 74 dB/ 72 dB*

CD, TUNER, LINE, TAPE 95 dB/ 81 dB*

Power Supply/ Miscellaneous

Power Requirements a.c. 220-230 Volts, 50/ 60 Hz

Power Consumption 650 W

AC outlets

Switched ($\times$ 2) 100 W

Unswitched ($\times$ 1) 100 W

Dimensions 420 (W) $\times$ 432 (D) $\times$ 161 (H) mm

Weight (without package) 12.4 kg

Accessories

Remote control unit 1

Batteries (AA/R6P) 2

Operating instructions 1

Power cord 1

NOTE:

Specifications and design are subject to possible modification without notice, due to improvements.

* Measured with the DIRECT switch set to on.

** Measured by Audio Spectrum Analyzer.